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September 23, 2019

Lisa M. Fowlkes
Chief, Public Safety and Homeland Security Bureau
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: *Promoting Network Reliability During Disasters*, PS Docket No. 19-251
Letter of September 12, 2019 from Lisa Fowlkes, Chief, Public Safety and Homeland Security Bureau to Robert G. Morse, Associate General Counsel, Verizon

Dear Chief Fowlkes:

Thank you for your September 12, 2019 letter inquiring into Verizon's preparations for wildfire events in California and other states, including our preparations for electric utilities' plans to proactively shut down their networks to help prevent wildfires. As requested, below is an overview of (1) our plans promoting service continuity, including back-up power resources, (2) plans for outreach to consumers, (3) coordination plans with public safety officials, power companies, and other relevant stakeholders, (4) additional measures we have taken to promote continued availability of service, and (5) best practices that have been particularly helpful in preparing for potential power shut-off events and wildfires.

Background

The California Public Utilities Commission ("CalPUC") recently authorized electric utilities in the state to shut off power in certain circumstances as a way to minimize the risk of wildfires.[1] To enable wireless providers to prepare for a public safety power shutoff, under these new rules electric utilities must provide wireless providers with 24-72 hours prior notice of a possible shutoff. The wireless industry actively participated in this proceeding and requested that the CalPUC also require that covered utilities provide detailed information on the circuits and locations affected by the shutoff, together with GIS/Shapefile maps of the affected areas.

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[1] *See Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions*, Decision Adopting De-Energization (Public Safety Power Shutoff) Guidelines (Phase 1 Guidelines), Rulemaking 18-12-005, Decision 19-05-042 (May 30, 2019) ("*CalPUC Order*").

We also requested a follow-up 2-4 hour notification prior to the *actual* shutoff, and that wireless providers be given the same priority notification level as "critical facilities" like hospitals, fire departments and water plants.

The CalPUC granted these requests, and while the shutoff program is new, we expect that utilities and communications providers will continue to evolve their implementation practices over time. Among other things, the communications industry supports a more standardized approach to the notice format and the thresholds for providing the notices, and is participating in the CalPUC's ongoing proceeding to address that concern. In the meantime, Verizon will maintain the same network reliability practices that already enable it to maintain and quickly restore service in wildfire-prone areas, whether in response to a shutoff or a wildfire itself. Just last Monday, Southern California Edison conducted a shutoff event. All sites utilized battery backup, and all but two sites remained operational on backup generators for the full duration of the commercial power shutoff.[2] Finally, the California legislature recently passed legislation addressing this issue and sent it to Governor Newsom for signature; if it is signed into law, our current network reliability and business continuity practices leave us well-positioned to meet any new statutory requirements.[3]

Our response to your specific questions follows.

1. ***Contingency plans to promote service continuity for public safety officials and consumers, including back-up power.***

The prolonged loss of commercial power due to a voluntary shutoff event will present risks and challenges to wireless providers. But as with a natural disaster, our existing back-up power resources will mitigate that impact on consumers and first responders. We take advantage of the utilities' shutoff notices to pre-position fuel or other assets as needed (such as portable generators and other deployable equipment). We maintain battery backup with up to 8 hours of backup power at all macro sites, and design those sites to support backup power through diesel generators that last between 24-72 hours on a single tank of fuel. For critical coverage sites that do not have permanent generators, we deploy portable generators that can be refueled.[4]

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[2] *See California Utility Shuts off Power Over Wildfire Risk*, ASSOCIATED PRESS (Sept. 16, 2019) https://www.usnews.com/news/best-states/california/articles/2019-09-16/california-utility-shuts-off-power-over-wildfire-risk. Neither permanent nor portable generators are feasible at those two sites; one is a "capacity" site located indoors in a hotel that did not affect coverage in the area, the other high up a mountain at a ski resort.

[3] *See An act to amend Sections 8386 and 8387 of, and to add Section 776.5 to, the Public Utilities Code, relating to communications*, SB 560, § 1 (as enrolled Sept. 12, 2019), adding new Section 776.5 to California Public Utilities Code, http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB560.

[4] In a few discrete areas in California, due to zoning and other restrictions on site placement Verizon provides wireless service solely through microcell technologies. These sites

(Whether to refuel a generator during a particular wildfire will depend, of course, on vehicular access to the area, safety to personnel, and potential impact on the wildfire.) In the few instances in which a shutoff event has occurred since the adoption earlier this year of the program, our network was well prepared for the event and service was not meaningfully disrupted due to the availability of these backup power resources.[5]

Verizon has comprehensively prepared to maintain and restore service through the multiple and simultaneous wildfire disasters in California over the past few years, and provided and supported relief efforts for consumers and first responders. Where a disaster adversely affects our network coverage, or where first responders or public safety require additional coverage or capacity, Verizon has a wide range of deployable assets to provide service, including backhaul to support transmitter sites (which is often critical when a wildfire downs poles and destroys other infrastructure used to support wireline providers' fiber backhaul to sites). For example:

- To increase capacity where customers and first responders need it most, Verizon maintains a fleet of cells on wheels ("COWs"), cells on light trucks ("COLTs"), satellite picocells on trailers ("SPOTs"), and repeaters on trailers ("RATs") that are stored at regional sites where they can be readily deployed to different fire-prone areas in the Western states.

- The Verizon Response Team ("VRT") deploys to the field during disasters to partner with first responders and relief organizations. For example, during the Camp and Woolsey fires, Verizon deployed temporary network assets including several Mobile Communications Trailers (MCTs), COLTs and COWs. And for the Woolsey fire, we deployed 18 portable generators to cell sites in areas where commercial power had not been restored. The VRT is also is often able to establish microwave paths for temporary connection of existing cell sites when needed.

- In many circumstances during last year's wildfire season, Verizon re-engineered existing sites to add additional capacity to support first responders and consumers in the affected areas, *without* the need for separate deployable assets. This practice enables us to focus deployable assets elsewhere.

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are not large enough to support backup batteries or generators. We have begun coordinating with local governments so they are aware of these limitations and can plan accordingly.

[5] In addition to this past Monday's event, PG&E conducted a shutoff on June 8, 2019—with no impact on service to Verizon customers. *See* https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20190608_sierra_foothills_update_pge_to_proactively_shut_off_power_for_safety_in_butte_and_yuba_counties_continues_to_evaluate_weather_in_nevada_el_dorado_and_placer_counties_north_bay_psps_update_power_restored_to_all_impacted_customers.

- The VRT maintains other important resources to solve both routine and complex wireless communication challenges in the field, such as eFemto 4G LTE network extenders and portable satellite communication equipment that can support emergency management agencies' emergency operations centers ("EOCs").

- The VRT makes other resources available to first responders and other public safety users on request and at no charge, including: cell phones; jetpacks; the "Cradlepoint Router," an enterprise grade Wi-Fi hotspot; LTE Wireless Home Phone and One Talk Products for venues like shelters and emergency operations centers; 4G LTE tablets; and charging stations.

- Finally, if needed, Verizon also sets up a Wireless Emergency Communication Center (WECC), which is an accessible trailer providing charging capacity for over 75 devices, internet connected laptops, laptop-capable printers, satellite-provided local news, WiFi access, covered awnings, tents, tables, and chairs. And Verizon often provides personal onsite set up and support during the duration of a disaster event.

These contingency plans to mitigate the effects of shutoff events, and for maintaining and restoring service during and after wildfires, are comprehensive and incorporate lessons learned from prior disaster events, including the devastating California wildfires of 2017 and 2018. We will continue to refine these plans based on our experience with electric utilities and public safety stakeholders.

2. Strategy for outreach to consumers.

The CalPUC's shutoff rules generally require utilities to partner with local governments to communicate to their customers "that a de-energization event is possible, the estimated start date and time of the de-energization event, the estimated length of the de-energization event, which may be communicated as a range, and the estimated time to power restoration…."[6] As a policy matter, an electric utility generally should be the primary source of information, such as the scope and timing of a shutoff event, to ensure that consumers receive consistent and timely information. The CalPUC directs "electric investor-owned utilities [to] develop notification strategies for all customer groups affected by de-energization,"[7] and we are prepared to provide input as those strategies are provided to us. Independent of the CalPUC's requirements, Verizon last year also expanded the information available to customers and to the public generally on its website. Our response to last year's Camp wildfire is a notable example of how we will use this

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6 *CalPUC Order* at A17. Note that on September 16th we transmitted a Wireless Emergency Alert from the Mono County Sheriff's Office stating "So Cal Edison has de energized power in Mono County due to high winds and fire danger."

7 *Id*. at A18-A19.

resource for major wildfire events in the future.[8] And at least some electric utilities in California provide public information about the location and duration of shutoff events.[9]

3. Coordination with public safety officials, power companies, and other relevant stakeholders.

As with consumer outreach, the CalPUC has primarily tasked electric utilities with responsibility for outreach to public safety officials and local governments regarding the timing and scope of shutoffs, including utilities' support for local EOC activities. The CalPUC has recognized that this will be an iterative process, and to that end we provided point of contact information and are prepared to engage with the electric utilities on this effort. Separately, we also will maintain our current policy of supporting state and local EOCs to coordinate emergency planning and recovery efforts before, during and after wildfires. We have attended and will continue to attend local EOC meetings to which we are invited to discuss our plans and resiliency efforts in the face of shutoff notifications and events. This practice is intended in part to facilitate direct coordination with both public safety officials and the utilities.

4. Additional measures to ensure the continued availability of communications.

Unlike events like hurricanes, for which some prior planning is feasible, reinforcing systems and infrastructure in advance of a wildfire is more challenging due to the unpredictable nature of those events. Where possible, though, we inspect sites to ensure that fuel tanks are topped off and create defensible spaces by engaging in responsible vegetation management and removing combustible materials from the site. And we execute our preexisting plans for augmenting our network with deployable facilities when needed. In addition, for safety and security reasons, we maximize the setback between the site and the surrounding fencing where possible; that also can have the benefit of protecting the structure from wildfires. For example, we lost only two (2) of 44 cell sites in Butte County to fire damage during the devastating Camp wildfire.

5. Following industry best practices can be particularly helpful to prepare for potential power shutoffs or wildfires.

A number of CSRIC best practices help us prepare for shutoff and actual wildfire events. Most are "disaster-agnostic" in that they relate to any disaster or any loss of commercial power; they are thus helpful even where the term "fire" is not explicitly mentioned. While there are dozens of CSRIC best practices with some relevance to wildfire preparation and disaster recovery, some of the most significant are:

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[8] *See* https://www.verizon.com/about/news/california-wildfire-networkupdates.

[9] *See* https://www.sce.com/safety/wildfire/psps (Southern California Edison); https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page (Pacific Gas & Electric).

- *No. 9-7-5214 – "Network Operators, Service Providers and Property Managers should consider placing all power and network equipment in a location to increase reliability in case of disaster (e.g., floods, broken water mains, fuel spillage). In storm surge areas, consider placing all power related equipment above the highest predicted or recorded storm surge levels."* As described above, site setback practices and the clearing of combustible materials can help to prevent damage to a site and enable us to restore service more expeditiously after backhaul connections are restored.

- *No. 9-9-1067 – "Network Operators, Public Safety, Service Providers and Property Managers should consider, in preparation for predicted natural events, placing standby generators on line and verifying proper operation of all subsystems (e.g., ice, snow, flood, hurricanes)."* As explained above, this practice is relevant to both predicted "natural" and shutoff events.

- *No. 9-9-5204 – "Service Providers, Network Operators, Public Safety and Property Managers should ensure availability of emergency/backup power (e.g., batteries, generators, fuel cells) to maintain critical communications services during times of commercial power failures, including natural and manmade occurrences (e.g., earthquakes, floods, fires, power brown/black outs, terrorism). The emergency/backup power generators should be located onsite, when appropriate."* Again, this practice is relevant to both predicted "natural" and shutoff events.

- *No. 9-9-0655 – "Network Operators, Service Providers, Property Managers and Public Safety should coordinate hurricane and other disaster restoration work with electrical and other utilities as appropriate."* This practice is reflected in our ongoing efforts to coordinate shutoff procedures with electric utilities and to engage at individual EOCs.

- *No. 9-7-0496 – "Network Operators and Property Managers should consider storing their portable generators at critical sites that are not otherwise equipped with stationary generators."* Again, this practice is relevant to predicted "natural" and shutoff events.

- *No. 9-7-1050 – "Network Operators and Service Providers should consider tertiary carrier/transport methods such as satellite, microwave or wireless to further reduce point of failures or as 'hot transport' backup facilities."* Our experiences in California show how these resources are particularly important for wildfire events. Even in cases where some backhaul redundancy may be possible, the blanketing, ubiquitous impact of a wildfire will often affect *all* paths to a site. We have invested in, and are prepared to use, satellite backhaul and microwave resources to meet this objective.

- *11-9-0619 – "Network Operators, Service Providers, Property Managers and Public Safety Providers should coordinate with fire agencies in emergency response preplanning efforts for communications equipment locations."* This best practice is reflected in utilities' and communications providers' engagement with CalOES and other state and local first responders and emergency management agencies in preparing for a power shutoff or wildfire event.

- *11-9-5204 – Service Providers, Network Operators, Public Safety and Property Managers should ensure availability of emergency/backup power (e.g., batteries, generators, fuel cells) to maintain critical communications services during times of commercial power failures, including natural and manmade occurrences (e.g., earthquakes, floods, fires, power brown/black outs, terrorism). The emergency/backup power generators should be located onsite, when appropriate.* Again, this practice is relevant to predicted "natural" and shutoff events.

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While the CalPUC's shutoff program is new, commercial power outages and wildfires are not. Our experience in planning for and restoring service after natural disasters, including California's devastating wildfires, has prepared us to maintain reliable service for our customers in shutoff-affected areas. Please contact me if you have any questions or need any additional information.

Sincerely,

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